

**AWARD**  
Scaling autonomous logistics

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**D10.1**  
**Project Handbook**

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**Lead: EasyMile**

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## Revision history

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0.2	24/03/2021	Sven Salomon	EasyMile	Technical review
0.3	24/03/2021	Magali Cottevieille	EasyMile	Quality review
1.0	30/03/2021	Inès Guth	EasyMile	Final version

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## List of acronyms

ADS	Autonomous Driving System
ATS	Autonomous Transportation System
AWARD	All Weather Autonomous Real Logistics operations and Demonstrations
AWARD PS	AWARD Partner Site
CCAM	Cooperative, Connected and Automated Mobility
CO	Confidential
CR	Change Request
D	Deliverable
DoA	Description of Action (Annex 1 – Description of Action (Part A) and (Part B) of the Grant Agreement)
EC	European Commission
EEAB	External Expert Advisory Board
EU	European Union
FMS	Fleet Management System
GA	Grant Agreement
HDV	Heavy-Duty Vehicle
KER	Key Exploitable Results
KPI	Key Performance Indicator
ODD	Operational Design Domain
OEM	Original Equipment Manufacturer
PCO	Project Coordinator
PGA	Project General Assembly
PNB	Project netboard
PO	Project Officer
PR	Peer Review
PU	Public
R&D	Research and Development
ROI	Return On Investment
SOTIF	Safety Of The Intended Functionality
T	Task
WP	Work Package
WPLC	Work Package Leader Committee



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# 1. Executive Summary

AWARD (All Weather Autonomous Real logistics operations and Demonstrations) is a 3-year Innovation action that has received funding from the European Union's Horizon 2020 research and innovation program under the Grant Agreement<sup>[1]</sup> No. 101006817.

AWARD's objective is to bring disruptive changes in the logistic industry by scaling an Autonomous Driving System technology and Fleet Management System for Heavy-Duty Vehicles, within the right safety and functional level to address 24/7 availability. This challenge will be particularly tackled by extending the autonomous vehicles performances under harsh weather conditions (rain, fog, snow) that are today limiting the Operation Design Domain (ODD), which describes the specific conditions under which a given Autonomous Transportation System (ATS) or feature is intended to operate. This to be developed along with an adapted regulatory framework for autonomous logistics operations in warehouses, airports, and ports.

A Consortium<sup>[2]</sup> of 29 partners has been built to address the above objectives. Such a large project, gathering more than 170 participants from 12 countries, needs the proper project management tools and processes to successfully achieve the mission assigned by the European Commission.

The present document "D10.1 - Project Handbook" is a public deliverable part of the "Work Package 10 - Project management and coordination" that sets the detailed project objectives, consortium organization, roles, responsibilities, high-level planning, processes, methodology and tools that will be implemented during the project life. As a public deliverable, D10.1 will be uploaded into the dedicated project webpage (<https://award-h2020.eu/index.php/public-deliverables/>) for consultation by visitors interested in learning about the project general organization and processes.

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<sup>[1]</sup> Grant Agreement NUMBER 101006817 – AWARD, 2021.

<sup>[2]</sup> Consortium Agreement based upon REGULATION (EU) No 1290/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 laying down the rules for the participation and dissemination in "Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)", and the European Commission Multi-beneficiary, 2021

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## 2. Project objectives

### 2.1. AWARD objectives<sup>[3]</sup>

AWARD's project aims at developing and operating safe Autonomous Transportation Systems (ATS) in a wide range of real-life logistic use cases in a variety of different scenarios. This encompasses the development of ADS-Dedicated vehicles targeting compliance with ISO 26262 and taking into consideration SOTIF recommendations. The autonomous Heavy-Duty Vehicles will also be capable of handling adverse environmental conditions such as heavy rain, snowfall, fog. The ADS (Autonomous Driving System) solution will be based on multiple sensor modalities and an embedded teleoperation system to address 24/7 availability. The ADS will then be integrated into multiple vehicle types used in low-speed areas. Finally, these vehicles will be deployed, integrated and operated in a variety of real-life use cases to validate their value in the application and identify any limitations. The project main use cases are: forklift loading and unloading in warehouses and industrial plants, hub-to-hub shuttle service on open road, automated baggage dispatching in airports, container transfer operations and vessel loading in ports.

Logistics operations will be optimized thanks to a new fleet management system that will act as a control tower, gathering all information from subsystems (vehicles, road sensors, IT systems, etc.) to coordinate the operations with a more systemic approach. This work should be a further step towards commercial exploitation of the technology and policy recommendations for certifications and approval processes.

#### 2.1.1. Technical objectives

AWARD is built around five (5) key objectives which will be monitored using Key Performance Indicators during the project. They are detailed in the Tables 1, 2, 3, 4 and 5.

#### **Objective 1: To ensure that the AWARD solutions will address logistics needs**

	Objective 1	Key Performance Indicator
1	Completeness of stakeholder and user groups involved, coverage of countries, sectors and vehicle types	All relevant stakeholder groups involved
2	Number of respondents to surveys	2000
3	Number of in-depth contextual interviews per investigated operational scenario	50
4	Number of operational scenarios and related user stories defined from above workshops, interviews and surveys	70
5	Completeness of requirements specified for each defined use case and technology	All requirements specified

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<sup>[3]</sup> Annex 1 – Description of Action (Part A) and (Part B) of the Grant Agreement

Table 1: Objective 1

**Objective 2: To develop a safe and scalable autonomous driving system able to manage harsh weather conditions, qualified for heavy-duty vehicles**

	Objective 2	Key Performance Indicator
1	To develop a safe and scalable autonomous driving system able to manage harsh weather conditions, qualified for heavy-duty vehicles	Demonstration of safety levels achieved for the ADS safety critical functions following the ISO26262:2018
2		Authorization issuance per each authority to operate the autonomous heavy-duty vehicle
3		Successful completion of the test protocol (defined for the project, inspired from existing tests like EuroNcap and creating new ones) for the 4 vehicles (harsh weather conditions, set of speeds, slopes, safe interaction with road users)

Table 2: Objective 2

**Objective 3: To improve efficiency of logistics operations with autonomous heavy-duty vehicles**

	Objective 3	Key Performance Indicator
1	To improve efficiency of logistics operations with autonomous heavy-duty vehicles	Documented efficiency of handling time for fleets of automated vehicles, as compared to manned vehicles in the same environment
2		Fleet operating in mixed traffic; fleets and assets are electric, energy efficient and optimized.
3		Fleet operating in mixed traffic; extended freight towards integrated and automated planning, booking, operation by automated and responsive synchromodal transport services.
4		Connection and process flow between terminal operation systems, security systems, surveillance systems, ITS-systems and autonomous shuttles is documented, evaluated and standardized based on best practices.
5		Road infrastructure is 100% prepared every day for optimized and fully automated transport. This is a critical point for automated transport, low manning cost in the control room and scalability of solutions

Table 3: Objective 3

**Objective 4: To perform innovative autonomous heavy-duty vehicles missions in real logistics operations**

	Objective 4	Key Performance Indicator
1	Demonstrate the all in all availability of the vehicle is higher than 99.25%.	99.25%
2	Demonstrate the all in all performance of the vehicle is at least 80% of a manual vehicle.	80%

3	Demonstrate the person effort in minutes per hour autonomous vehicle operating is less than	5 min
4	Cost benefit analysis - comparing manual process with automated process and determine customer ROI	ROI < 3 years

Table 4: Objective 4

### Objective 5: To provide insights and recommendations on the standardisation and harmonisation of certification

	Objective 5	Key Performance Indicator
1	To provide insights and recommendations on the standardization and harmonization of certification processes and type approval at EU level and on regulation that ensure both safety and economic viability of automated transport systems.	Benchmark of 20 pilots in Europe & European projects: identification of regulation barriers, benefits and costs and analysis of adequacy with societal needs
2		Identification of 5 emerging business models applicable to CCAM and the case studies of AWARD
3		Recommendations on validation methods and tools for a widely accepted European type approval, regulatory frameworks

Table 5: Objective 5

#### 2.1.2. Communication & dissemination objectives

Communication and dissemination objectives have also been defined, together with KPIs for the monitoring of each activity. These objectives will be fulfilled through the development of the project. The deliverable *D.9 Plans for dissemination of the results* details the dissemination plan to be followed throughout the project in order to achieve the KPIs.

Table 6 details the dissemination objectives, while Table 7 details the communication objectives.

Target audience / stakeholder	Audience / stakeholder description	Dissemination channels / platforms	KPIs for measuring the effectiveness of the approach	Feedbacks expected
Industries and Business Supporting Organizations	Automated freight industry and logistics stakeholders (technology providers, logisticians, freight forwarders, carriers, etc.), ports, airports	Newspapers, articles, LinkedIn, audio-visual media	1000 new followers per year in social networks	Business development of the AWARD solutions after the project
		6 Workshops	Min. 150 potential customers invited to pilot project sites.	Their motivation; innovation scouting and investment for more automated
		Visits to demonstrations		

		sites of the different pilot projects		freight management
Policy makers	Authorities at national and international level	Conferences, Public events, Press releases	Implementation of new policies and regulatory framework related to ATS  Key message: need for new approaches to certify driverless freight vehicles	
Research community (Academic institutions)	Specifically, researchers & engineers specialized in automated vehicle technologies, fleet management systems, logistics	Presentations and publications in international conferences	30 Publications	Transferring and adopting results. Their motivation: stimulating new research collaboration and training students.
		Publications in international journals	10 Publications	

Table 6: Dissemination objectives

	Minimum target values until project end
Public website	Number of single visits: > 3000.
Social Networks	Number of tweets (Twitter): > 2000 Number of posts on LinkedIn: > 300 Response time on social media: > 24 hours
Visual identity	Number of multipliers (projects, ecosystems, networks, initiatives) engaged to promote AWARD > 15
Public workshop and events	Number of complementary events in which AWARD is promoted > 10
Public website	Number of single visits: >3000.
Social Networks	Number of tweets (Twitter): > 2000 Number of posts on LinkedIn: > 300 Response time on social media: > 24 hours

Table 7: Communication objectives

## 2.2. Key Exploitable Results

In a wider perspective, AWARD project will be also evaluated and assessed in respect to the H2020 high-level objectives. Therefore, six (6) Key Exploitable Results (KER) have been identified, in line with the Objectives described in section [2.1. AWARD Objectives](#).

The KER are detailed in Table 8.

	Detail
KER 1	Definition of end-user's specifications and requirements
KER 2	Safe and scalable autonomous driving system validated for harsh weather conditions
KER 3	Zero-Emission Driverless Autonomous Heavy-Duty Vehicles certified for extended ODDs
KER 4	Interoperable safe and secure fleet management and supervision system that optimizes logistics operations
KER 5	Demonstrations of fully available automated HDV performing 24/7 for real logistics operations
KER 6	Policy paper for recommendations regarding the regulatory framework for the deployment of fully automated HDV operating real logistics operations in extended ODDs (e.g. harsh weather conditions)

*Table 8: AWARD's Key Exploitable Results*

Compiled together, the KER will answer the H2020 objectives as detailed in the Table 9.

	H2020 objectives	Corresponding KER
1	Contribution to the accelerated deployment of innovative connected and automated freight transport solutions in Europe.	KER 2 KER 3 KER 6
2	Contribution to the increase of the overall safety and efficiency of freight operations of individual trucks or fleets in confined areas and in mixed traffic (hub to hub) through innovative connected and automated driving systems.	KER 2 KER 3 KER 4
3	Actions will show the uptake of new business models	KER 1 KER 5
4	Actions will seek to reach a total cost reduction of operations and logistics and supply chain, leading to improved competitiveness of the European transport and logistics industry	KER 2 KER 3 KER 4 KER 5

*Table 9: H2020 objective versus AWARD's KER*

## 3. Consortium organization

### 3.1. Consortium Members

To achieve the objectives of AWARD project described in section [2.1. AWARD Objectives](#), a Consortium composed of 29 complementary-skilled partners was built.

Table 10 hereafter details the Beneficiaries' list including respective numbering, short name, country, and role in the project.

	Beneficiary number	Short Name	Country	Role
EASYMILE	1	EASYMILE	France	Coordinator
CONTINENTAL TEVES AG & CO. OHG	2	CONTI	Germany	Beneficiary
KAMAG Transporttechnik GmbH & Co. KG	3	KAMAG	Germany	Beneficiary
TERBERG BENSCHOP BV	4	TERBERG	Netherlands	Beneficiary
SMART AIRPORT SYSTEMS	5	SAS	France	Beneficiary
DEMATIC	6	DEMATIC	Belgium	Beneficiary
DFDS AS	7	DFDS	Denmark	Beneficiary
CENTRE D'ETUDES ET D'EXPERTISE SUR LES RISQUES L'ENVIRONNEMENT LA MOBILITE ET L'AMENAGEMENT	8	CEREMA	France	Beneficiary
Teknologian tutkimuskeskus VTT Oy	9	VTT	Finland	Beneficiary
AIT AUSTRIAN INSTITUTE OF TECHNOLOGY GMBH	10	AIT	Austria	Beneficiary
APPLIED AUTONOMY AS	11	APPLIED AUTO	Norway	Beneficiary
DIGITRANS GMBH	12	DIGITRANS	Austria	Beneficiary
ENIDE SOLUTIONS .S.L	13	ENIDE	Spain	Beneficiary
IRU PROJECTS ASBL	14	IRU	Belgium	Beneficiary
Association CARA	15	CARA	France	Beneficiary
NAVTECH RADAR LIMITED	16	NAVTECH	United Kingdom	Beneficiary

BUSINESS UPPER AUSTRIA - OO WIRTSCHAFTSAGENTUR GMBH	17	BIZUP	Austria	Beneficiary
ITS NORGE-NORSK FORENING FOR MULTIMODALE INTELLIGENTE TRANSPORT SYSTEMER OG TJENESTER	18	ITS NORWAY	Norway	Beneficiary
LINZ CENTER OF MECHATRONICS GMBH	19	LCM	Austria	Beneficiary
FH OO FORSCHUNGS & ENTWICKLUNGS GMBH	20	FH OOE	Austria	Beneficiary
AVINOR AS	21	AVINOR	Norway	Beneficiary
Adasky Ltd.	22	ADASKY	Israel	Beneficiary
FORESIGHT AUTOMOTIVE LTD	23	FORESIGHT	Israel	Beneficiary
BRP-ROTAX GMBH & CO KG	24	BRP-ROTAX	Austria	Beneficiary
CertX AG	25	CERTX	Switzerland	Beneficiary
OTTOPIA TECHNOLOGIES	26	OTTOPIA	Israel	Beneficiary
AUSTRIATECH - GESELLSCHAFT DES BUNDES FUR TECHNOLOGIEPOLITISCHE MASSNAHMEN GMBH	27	AUSTRIATECH	Austria	Beneficiary
Schenker & Co AG	28	SCHENKER	Austria	Beneficiary
FRANCE AVIATION CIVILE SERVICES	29	FRACS	France	Beneficiary

Table 10: Consortium members

### 3.2. Project Coordinator

EasyMile is the Project Coordinator (PCO) of AWARD, and acts as the intermediary between the Consortium Members and the European Commission.

EasyMile has designated two (2) representatives to lead the PCO's obligations:

- An Administrative and Financial coordinator
- A Project Manager and Technical coordinator

### 3.3. Governance structure

AWARD project is governed by different bodies that have identified roles within the project. There are two official Consortium Bodies:

- The Project General Assembly (PGA)



- The Work Package Leader Committee (WPLC)

The Project General Assembly (PGA) is the ultimate decision-making body of the Consortium. It is composed of 1 representative for each Consortium member. The WPLC is the supervisory body for the execution of the project with their respective Work Packages. They report and are accountable to the Project General Assembly. Members of the WPLC are the Coordinator and Work Package Leaders.

Finally, the Consortium will be supported by the Expert External Advisory Board (EEAB) composed of voluntary experts interested in accompanying and advising the project, within their respective field of expertise. The EEAB will be officially nominated during the first PGA meeting organized in May 2021.

The governance structure of AWARD is defined in Figure 1:

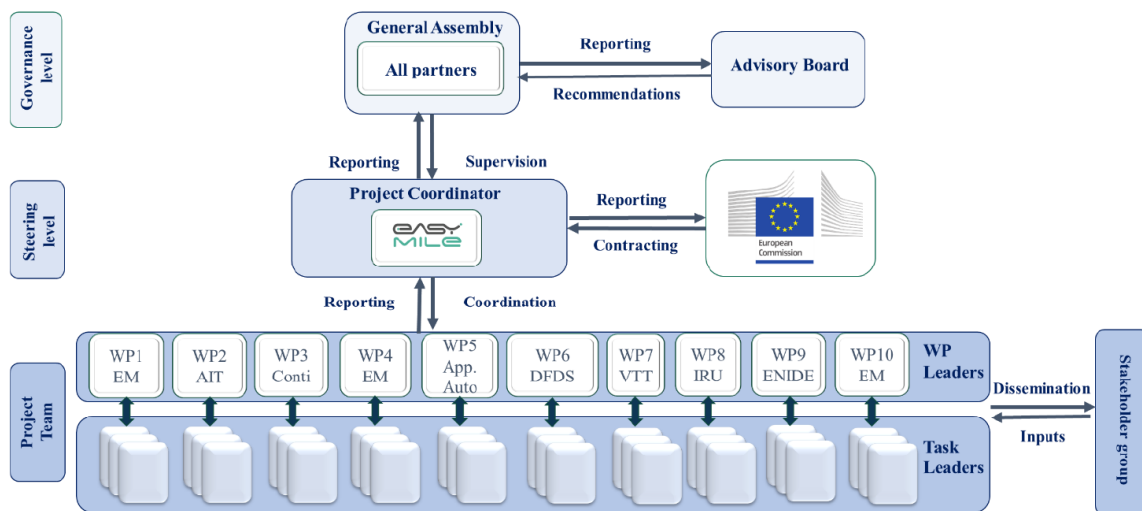


Figure 1: Governance structure

## 4. Work packages

### 4.1. Description

AWARD's project is composed of 10 Work Packages (WP) that will contribute to the objectives of the project as specified in section [2.1. AWARD Objectives](#). The project started on the 1<sup>st</sup> of January 2021 (M1) and ends on the 31<sup>st</sup> of December 2023 (M36), for a duration of 3 years.

The Work Packages of AWARD can fall into 4 categories:

- Supportive and transversal Work Packages: WP1, WP9, WP10
- Socio-economic & legal framework Work Packages: WP2, WP8
- Technical Work Packages: WP3, WP4, WP5
- Demonstrative Work Packages: WP6, WP7

They have close interactions, and strongly rely on each other such as shown in the Figure 2:

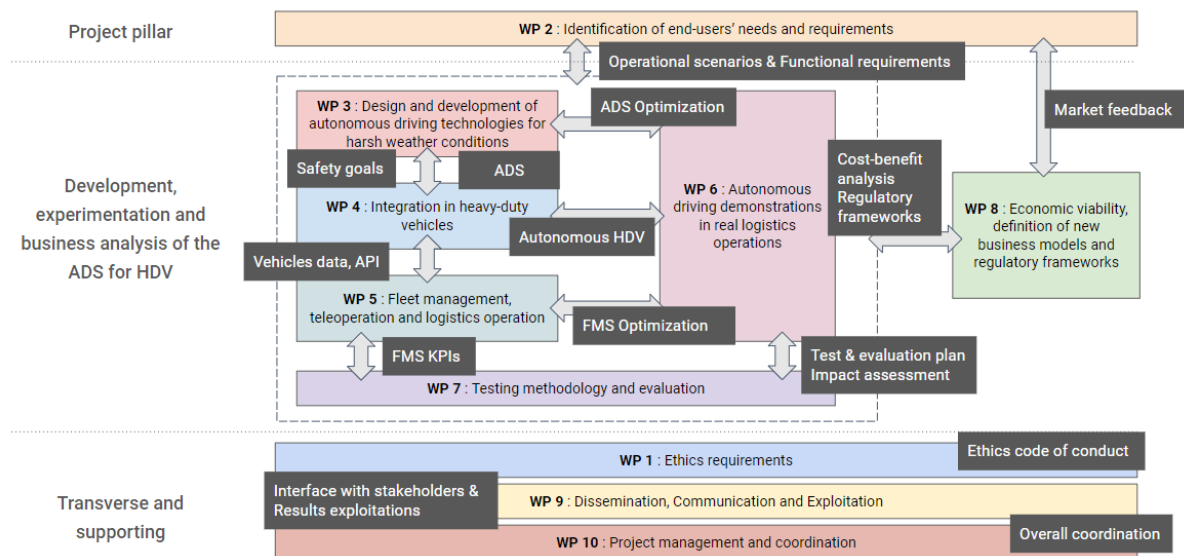


Figure 2: WP interactions

WP1 sets the ethical requirements and rules that will be applied during the whole duration of the project.

WP2 is dedicated to identifying the end-users' needs through stakeholder's consultation. The operational scenarios and technical specifications for the ADS and the overall HDV will be deduced from the analysis of stakeholders' requirements.

WP3 and WP4 focus on the development and validation of 4 ADS-HDV that will be deployed on the pilot projects, equipped with an innovative ADS able to address harsh weather conditions.

WP5 aims at developing an innovative Fleet Management System (FMS) adapted to autonomous vehicles and logistics operations.

WP6 and WP7 are dedicated to the implementation, monitoring, testing and evaluation of the 4 pilot projects. Four types of autonomous HDV will be deployed to tackle technological challenges related to autonomous logistics operations in mixed traffic in port, airport, and warehouses.

WP8 focuses on the identification of market opportunities and the study of new business models together with the analysis of regulatory frameworks, providing policy recommendations on safe and rapid deployment of autonomous HDV in real logistics operations. The objective being the demonstration of the scalability of such innovating logistics transport systems.

WP9 will implement a plan for the dissemination and exploitation of the project outcomes (public communication, stakeholder engagement, actions towards the scientific and industrial communities).

WP10 is finally handled by the coordination team who will secure the allocation and coordination of all resources (human and financial) to reach the project objectives within the predefined contractual and time frames (project progress monitoring, costs follow-up, contractual, administrative and management of the EEAB with complementary interest to the project).

## 4.2. Work Package leaders

The Work Packages and corresponding Leaders are detailed in the Table 11:

WP Number	WP Title	Lead Beneficiary	Start month	End month
WP1	Ethics requirements	EASYMILE	1	36
WP2	Identification of end-users' needs and requirements	AIT	1	9
WP3	Design and development of autonomous driving technologies for harsh weather conditions	CONTI	2	33
WP4	Integration in heavy-duty vehicles	EASYMILE	1	24
WP5	Fleet management, teleoperation and logistics operations	APPLIED AUTO	1	36
WP6	Autonomous driving demonstrations in real logistics operations	DFDS AS	1	36
WP7	Testing methodology and evaluation	VTT	4	36
WP8	Economic viability, definition of new business models and regulatory frameworks	IRU	7	36
WP9	Dissemination, Communication and Exploitation	ENIDE	1	36
WP10	Project management and coordination	EASYMILE	1	36

*Table 11: Work packages & Lead*

## 5. Planning

### 5.1. Work Packages and Tasks

Work Packages are split into a certain number of Tasks. Each Task has an identified duration during the project.

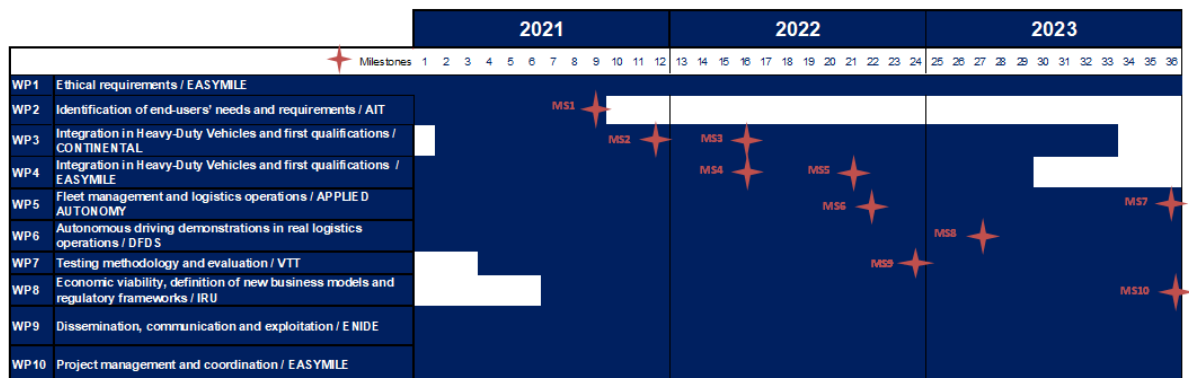
### 5.2. Milestones

Milestones are control points in the project which will help to chart project progress. They correspond to the completion of a key deliverable, allowing the next phase of the work to begin or be needed at intermediary points.

During the life of AWARD's project, 10 Milestones will be passed. Their means of verification have been identified as they use Deliverables produced in the frame of the project or a specific report if none of the Deliverable is matching the Milestone requirement.

### 5.3. High-level Planning

The high-level Planning of AWARD project is detailed in the Figure 3.



## 6. Deliverables

Deliverables are contractual outputs (e.g. information, special report, a technical diagram brochure, list, a software milestone or other building block of the project) that must be produced at a specific time during the action, and is generally concluding a Task.

The deliverables have different levels of dissemination (CO: Confidential, only for members of the Consortium including the European Commission services; PU: Public). They must be prepared and submitted on time.

There are in total 54 Deliverables. 21 of them are Public Deliverables and will be published on AWARD website. The detailed list of the public deliverables is available in Table 12.

Number	Title	Related Task	Lead	Type	Dissemination level	Due Date (months)
D2.1	System Scope	T2.1	EASYMILE	Report	PU	9
D2.2	User and Stakeholder Requirements	T2.2	AIT	Report	PU	9
D3.5	Public architecture design report	T3.1	EASYMILE	Report	PU	12
D3.6	Public report for measurement campaigns of ADS	T3.3	EASYMILE	Report	PU	16
D4.4	Factory Acceptance test report	T4.2	EASYMILE	Report	PU	21
D4.6	Public safety Documents including Safety plan, Hazard Analysis and Risk Assessment, Functional and technical safety concepts	T4.1	EASYMILE	Report	PU	11
D4.7	Safety Evaluation report: Assessment report	T4.3	CertX AG	Report	PU	24
D5.7	Public Architectural model for fleet management and control services	T5.1	Applied Auto	Demonstrator	PU	8
D7.1	Test and evaluation plan	T7.1	VTT	Report	PU	12
D7.3	Impact assessment and user survey results	T7.3 / T7.4	ENIDE	Report	PU	36
D7.4	Final test and evaluation plan	T7.1	VTT	Report	PU	24
D8.1	Market opportunities, barriers and solutions	T8.1	ENIDE	Report	PU	12
D8.4	Recommendations - regulatory and governance frameworks	T8.4	CertX AG	Report	PU	36

D8.5	Final market opportunities, barriers and solutions	T8.1	ENIDE	Report	PU	34
D9.1	Project website and social network account	T9.1	ENIDE	Websites, patents filling, etc.	PU	3
D9.2	Plans for dissemination of the results	T9.1	ENIDE	Report	PU	3
D9.4	Conferences and Education and training report	T9.3	CARA	Report	PU	36
D9.5	Final dissemination report	T9.1	ENIDE	Report	PU	36
D9.7	Roadmap towards connected and automated heavy-duty vehicles for logistics operations	T9.4	ENIDE	Report	PU	36
D10.1	Project handbook	T10.2	EASYMILE	Report	PU	3
D10.2	Impact assessment methodology	T10.3	ENIDE	Report	PU	12
D10.5	Data Management Plan	T10.2	EASYMILE	ORDP	PU	6

*Table 12: List of public Deliverables*

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## 7. Collaborative tools

### 7.1. Reporting & deliverables monitoring tool: Project netboard

#### 7.1.1. PNB background

The Coordinator has subscribed to an external tool called Project netboard<sup>[4]</sup> (PNB). PNB is a web-based platform developed specifically for preparing and managing the results of European and national research and innovation collaborative projects.

This tool is used to prepare and run projects according to the specific rules of Funding Authorities and complies with their rules and procedures.

AWARD PNB is therefore tailor-made to efficiently complement the H2020 Participant Portal electronic exchange system which is the official submission portal.

#### 7.1.2. PNB objectives for AWARD

PNB will be used for 3 purposes in the frame of AWARD:

1. Contractual reporting purpose:
  - Production of the Periodic Report (composed of the periodic Financial reporting and the periodic Technical Reporting) due to the European Commission in M18 (June 2022)
  - Production of the Final Report (composed of the final Financial reporting and the final Technical Reporting) due to the European Commission in M36 (December 2023)
2. Internal reporting purpose:
  - Production of the 1<sup>st</sup> Internal Report (composed of the 1<sup>st</sup> Internal Financial Report and the 1<sup>st</sup> Internal Technical Report) due in M9 (September 2021)
  - Production of the 2<sup>nd</sup> Internal Report (composed of the 2<sup>nd</sup> internal Financial report and the 2<sup>nd</sup> internal Technical Report) due in M27 (March 2023)
3. Deliverables storage: Final versions of AWARD deliverables that will be submitted to the European Commission will be stored on PNB platform

#### 7.1.3. Organization of the reporting

The Contractual and Internal reporting described in the previous section will follow the same process. Reporting will focus on 2 aspects:

- Financial reporting
- Technical reporting

---

<sup>[4]</sup> Project netboard, Absiskey's software tool for funded projects: <https://www.absiskey.com/en/project-netboard-tools-software>

## **Financial Reporting**

The Financial Report will contain the Financial Statements and Use of resources of each Consortium Member. The final report will be computed by the Coordinator.

The following information will be reported directly on the PNB tool by each Consortium Member and each linked third party:

- Efforts per month (hours and salaries): shall be detailed for each individual person contributing to the scope of work of a Beneficiary.
- Costs (in €): shall detail the direct costs incurred such as travels, equipment, other goods and services, subcontracting, etc.

Each Consortium Member shall carefully justify any Effort and Cost reported in PNB tool in the corresponding field.

After every Consortium Member has reported the above information for the on-going reporting period (interim, periodic, or final reporting), the Coordinator will extract per Beneficiary the following documents to validate the reported information:

- Financial Statement per Beneficiary
- Use of resources per Beneficiary

Information will then be reported on the H2020 Participant Portal electronic exchange system by each Beneficiary.

## **Technical Reporting**

The Technical Report will contain the technical activities performed by each Consortium Member within the Work Packages and Tasks where it is involved as Work Package Leader, Task Leader or Contributor.

The following information will be reported directly on the PNB tool by each Consortium Member:

- Activity reporting:
  - o As WP Leader: summary of the achievements within the Work Package, taking into accounts contributions from the Task Leaders.
  - o As Task Leader: summary of the achievement within the Task, taking into accounts contributions from the Task Contributors.
  - o As Contributor: description of the activities performed within each Task
- Gender of R&D participants: Consortium Members shall inform and update the exact number of female and male participants contributing to AWARD's project

Each Consortium Member shall carefully detail the technical activities performed by Work Packages and Tasks, keeping consistency with efforts and costs declared in the Financial Report.



After every Consortium Member has reported the above information for the on-going reporting period (interim, periodic, or final reporting), the Coordinator will extract all the information into one single document that will contain:

- The activity report, detailing the work performed per WP and Task
- The Gender of R&D participants involved in the project
- The Deliverable List of the period

The Technical reporting follows the same quality process presented in section [8.3. Quality management](#).

## 7.2. Operational & technical monitoring tool: AWARD Partner Site

The Consortium Member DFDS has implemented, for the Consortium and for the duration of AWARD project, a Microsoft Teams collaboration platform called AWARD Partner Site (AWARD PS). AWARD PS is therefore dedicated to AWARD project and is hosted by DFDS.

During the AWARD PS setup, access to the platform has been provided to all the participants that are listed in the AWARD Contact List.

If a participant needs to have an access or experiences connection issues, requests shall be addressed to the Coordinator that will coordinate the account set up.

The Table 13 describes the main folder arborescence of AWARD PS that has been implemented:

Main Folders	Content	Responsible
General	General information on the project such as the partner's Contact List, the Annotated Model of the Grant Agreement, Project netboard information, Templates, etc.	EASYMILE
Financial	Financial information for the periodic financial reporting, FAQ, etc.	EASYMILE
Legal	Grant Agreement, Consortium Agreement, Amendments management, etc.	EASYMILE
Technical	Periodic technical reporting working folders, etc.	EASYMILE
WP1 – Ethical requirements	WP1 working folders	EASYMILE
WP2 – Identification of end-users' needs and requirements	WP2 working folders	AIT
WP3 – Design and development of autonomous driving technologies for harsh weather conditions	WP3 working folders	CONTI

WP4 – Integration in heavy-duty vehicles	WP4 working folders	EASYMILE
WP5 – Fleet management, teleoperation and logistics operation	WP5 working folders	APPLIED AUTO
WP6 – Autonomous driving demonstrations in real logistics environment	WP6 working folders	DFDS AS
WP7 – Testing methodology and evaluation	WP7 working folders	VTT
WP8 – Economic viability, definition of new business models and regulatory framework	WP8 working folders	IRU
WP9 – Dissemination, communication and exploitation	WP9 working folders	ENIDE
WP10 – Project management and coordination	WP10 working folders	EASYMILE

*Table 13: AWARD Partner Site organization*

The Coordinator is responsible for the organization of the subfolders of the main folders General, Financial, Legal and Technical.

Each WP Leader is responsible for the organization of the subfolders within its WP's main folder.

---

## 8. Management procedures

### 8.1. Document management

#### 8.1.1. Documents registry

Throughout the life of AWARD's project, two types of documents will be produced:

- **Contractual documents** due to the EC (such as Deliverables, Period Report, etc.)
- **Internal documents** necessary to perform the DoA (Minutes of Meetings, Monthly Report, etc.)

The list of the documents created within the project will be stored into AWARD PS and will be updated by the document's main Author. The last version of the document's link will be specified in the registry. Table 14 is an extract of AWARD's Document Registry.

Document Name	Type	Author (Name, Company)	Creation date (dd/mm/yyyy)	Direct link (Last version)	Short description
AWARD-WP10-OTH-Document-management.xlsx	Other	Inès Guth, EM	02/02/2021	<a href="#">Link</a>	AWARD's documents registry & naming convention
AWARD-WP10-PR-Peer-reviewers.xlsx	Other	Inès Guth, EM	29/01/2021	<a href="#">Link</a>	Peer reviewers per Deliverable
AWARD-WP10-TEMP-Temporary-deliverable-template.docx	Template	Inès Guth, EM	02/02/2021	<a href="#">Link</a>	Temporary deliverable template
AWARD-WP10-TEMP-Minutes-of-meeting.docx	Template	Inès Guth, EM	02/02/2021	<a href="#">Link</a>	Minutes of meeting template
AWARD-WP10-TEMP-Change-request-MEMBER NAME.xlsx	Template	Inès Guth, EM	02/02/2021	<a href="#">Link</a>	Change Request template

*Table 14: Extract of AWARD's Document Registry*

#### 8.1.2. Contractual documents

##### 8.1.2.1. Storage

During the project life, contractual documents will be produced and submitted to the European Commission. Those contractual documents are listed hereafter:

- Deliverables (54)
- Periodic report (1)
- Final report (1)

The Deliverables will be produced and reviewed by the Members using the MS Teams "AWARD Partner site" account. The final version ready for submission to the European Commission will then be stored on AWARD PNB.

The Periodic report and Final report will be directly produced on AWARD PNB, using the tools and guidelines of the interface (refer to section [3.5. Collaborative tools](#)).

;

### 8.1.2.2. Naming convention

The naming convention used during the project for the contractual documents is detailed in Table 15.

#	Component	Rule	Comment
(1)	AWARD	Fix initial element	Project Name
(2)	Document ID	Dnumber	Deliverable ID
		Periodic-report	Periodic Report to be submitted to the EC
		Final-report	Final Report to be submitted to the EC
(3)	Document Name	Short name	Each word separated with “-“
(4)	Status	Draft	Draft version before review
		Final	Final version reviewed by the Technical PR and Quality PR
		Submitted	Final version submitted to the EC
		Approved	Final version approved by the EC
(5)	Extension	Final extension	Eg. .docx, .pdf, .xlsx
(6)	Separator	“-“ between components (1), (2), and(3)	
		“_” between components (3) and (4)	
		No separator between components (4) and (5)	

*Table 15: Naming convention of contractual documents*

The naming convention should respect the following components’ organization and order:

(1)-(2)-(3)\_(4)(5)

**Examples:**

- AWARD-D10.6-Project-Management-Plan\_Submitted.docx
- AWARD-D10.1-Project-Handbook\_Draft.pdf

### 8.1.3. Internal documents

#### 8.1.3.1. Storage

In addition to contractual documents, internal documents will be produced by the Consortium Members to perform the Description of Action (DoA) described in the Annex 1 – Description Of Action (Part A) and Annex 1 (Part B) of the Grant Agreement.

Internal documents will be stored on AWARD PS, within the architecture described in the section [3.5. Collaborative tools](#).

#### 8.1.3.2. Naming convention

The naming convention used during the project for the internal documents is detailed in Table 16.

#	Component	Rule	Comment
(1)	AWARD	Fix initial element	Project Name
(2)	Document ID	WPnumber	Work Package ID
		PGA	Project General Assembly
		WPLC	Work Package Leader Committee
		EEAB	Expert External Advisory Board
(3)	Reference	AG	Agenda
		COM	Website, press, media actions, videos, leaflet, etc.
		CR	Change request
		DEM	Demonstrator (software, prototype, etc.)
		IR	Internal Report
		MOM	Minutes of Meeting
		MR	Monthly Review
		N	Note
		OTH	Other
PR	Peer Review		

		PRES	Presentation
		RM	Risk Management
		SCH	Schedule
		TEMP	Template
		UG	User Guide
(4)	Document Name	Short name	Each word separated with “-“
(5)	Extension	Final extension	Eg. .docx, .pdf, .xlsx, .png, .jpg, etc.
(6)	Separator	“-“ between components (1), (2), (3) and (4)	
		No separator between components (4) and (5)	

*Table 16: Naming convention of internal documents*

The naming convention should respect the following components’ organization and order:

(1)-(2)-(3)-(4)(5)

**Examples:**

- AWARD-WP1-N-Brainstorming-results.docx
- AWARD-WPLC-MOM-Quarterly-meeting#1.docx

#### 8.1.4. Templates

Some templates for contractual and internal documents will be proposed by the PCO to align produced documents by the Consortium Members on a common reference.

Templates will be provided for the set of documents listed hereafter. As the project will progress, the list will be updated and improved based on Consortium Members’ needs.

**Contractual documents**

- Deliverable
- Periodic Report
- Final Report

**Internal documents**

- Minutes of Meeting
- Change Requests
- Peer Reviews feedback form
- Risk register

The templates are available in section [11. Annex](#).

## 8.2. Changes management

### 8.2.1. CR Periodic process

To manage the continuous requests from Consortium Members related to Changes Requests (CR) on the project, the PCO has implemented a process enabling to:

1. Qualify the CR (urgency and impact gravity)
2. Submit the CR to the PGA for acceptance (if it requires a decision from the PGA as per specified in the Consortium Agreement)
3. Submit the CR to the European Commission (via the Project Officer (PO)) for advice
4. Deliver the EC feedback to the Consortium Members

Figure 4 presents the process implemented by periods (i.e. CR Periodic process).

Each CR Period includes:

- **Phase 1:** 1 month to prepare the CR (responsible: Member & PCO):
  - o Closing of Period N (CR gathered in Period N will be submitted to the PGA)
  - o Opening of Period N+1 (new CR shall be reported into Period N+1 until the 15<sup>th</sup> of the next month)
- **Phase 2:** 15 calendar days to review the CR (responsible: PGA)
- **Phase 3:** dependent on the time taken by the PO to provide the feedback (responsible: PCO)

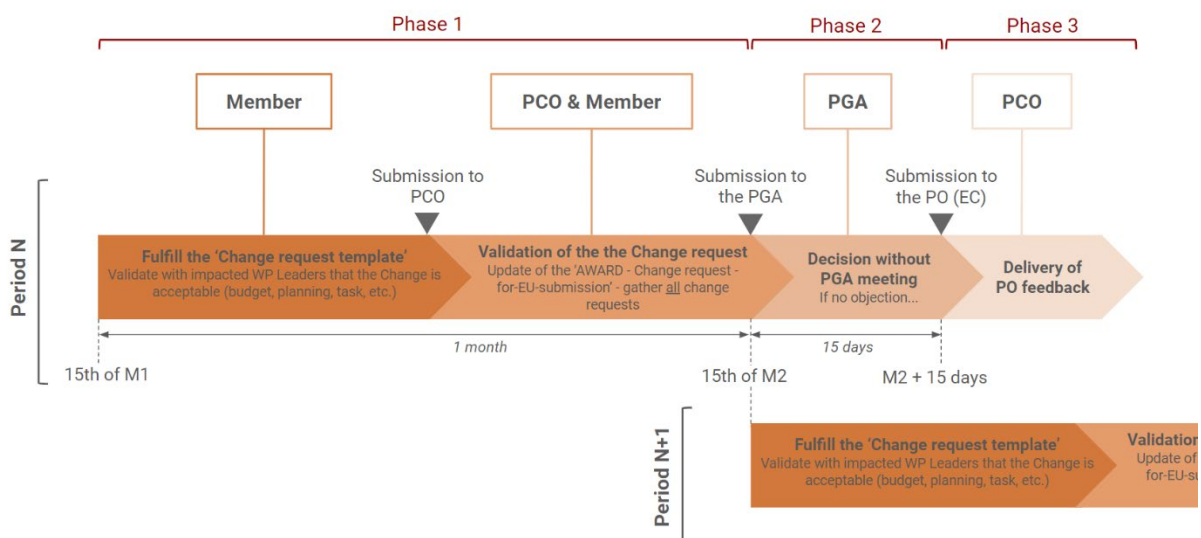


Figure 4: CR Periodic process

### 8.2.2. Phase 1: CR qualification & submission to the PGA

Change requests are characterized under the criteria presented in Table 17:

	Criteria
Type of demand	Nice to have Must have
Priority	Low Important Critical
Type of request	Budget Planning Work package Task Deliverable

Table 17: CR qualification criteria

A CR template is maintained by the PCO and stored into AWARD PS, facilitating the reporting and inventory of a CR.

It is the responsibility of a Member to fulfill the CR template, and to:

1. detail the CR (what modifications are requested)
2. provide proper justifications (what are the reasons for such changes)
3. validate the CR with other stakeholders if any (WP Leaders, Task Leader, PCO, PM, etc.)
4. assess the impacts of the CR on the project
5. submit the CR to the PCO

Note: During Phase 1, the PCO assesses the urgency of the CR and may decide to exceptionally address the CR outside the CR Periodic process.

### 8.2.3. Phase 2: CR acceptance by the PGA

All the CR reported for a given period are inventoried and listed into one single document which is submitted to the PGA for a decision without a meeting (as specified in the Consortium Agreement).

If no objection is emitted by a PGA Member after 15 calendar days, then the CR Period N (N= Change Request period number) is submitted to the PO for advice.

### 8.2.4. Phase 3: CR review by the EC

The CR Period N is reviewed by the PO in order to provide advice on:

- the CR feasibility
- the CR impact on the Grant Agreement (eg. amendment of the GA required)

After the PO has provided the feedback, the PCO is responsible for sharing them with the Consortium Members and the PGA to take the corresponding actions.



## 8.3. Quality management

### 8.3.1. Deliverables quality policy

Proper quality management of AWARD's output is key to the success of the project. The project Deliverables are meant to provide information on the project development, but also on the results which will be shared publicly on AWARD's website.

A quality review process of the Deliverables has therefore been implemented with the WP Leaders to ensure that each Deliverable meets the quality criteria of the European Commission:

- Concise document (40-50 pages for a report)
- Executive Summary and Conclusion
- Compliance with the DoA of the GA
- On time submission

To facilitate the production of Deliverables, the PCO will create a Deliverable template with mandatory fields.

### 8.3.2. Deliverables Peer Review

#### 8.3.2.1. Roles

Roles have been defined during the production and review of a deliverable, as described in Table 18:

Role	Profile
Author	<b>Owner of the document.</b> Technical expert in the field. Initiates the production of the document and is responsible for keeping the content up to date. Can be more than one person (in that case, a 'Main' Author is identified)
Technical Peer Reviewer	<b>Technical expert in the field.</b> Assesses the technical content and organization of the document. Cannot be Author nor Quality PR Can be more than one person.
Quality Peer Reviewer	<b>Project Coordinator.</b> Assesses that the content of the deliverable is compliant with the DoA of the Grant Agreement.

	<p>Ensures that information in the deliverable is respecting the corresponding dissemination level.</p> <p>Ensures that the deliverable is meeting the EC quality criteria.</p> <p>Produces the final PDF to be submitted to the EC.</p> <p>Cannot be Author nor Technical PR Can be more than one person.</p>
--	--

Table 18: Deliverable quality roles

### 8.3.2.2. Peer Review process

#### 8.3.2.2.1. Organization

The quality review process of the Deliverables is called the Peer Review (PR) process. The PR process starts 3 weeks before the submission date of the Deliverable to the EC and is split in 2 phases.

**Phase 1:** Both the Quality and Technical PR start simultaneously:

- The Quality PR to assess the content's compliance with the DoA of the GA
- The Technical PR to assess the technical content

This common phase enables an efficient and quick iterative update method if important deviations are identified by the Quality PR.

**Phase 2:** The Quality PR continues and ensures that the Deliverable meets the AWARD's graphic charter and recommendation, and produces the final PDF to be submitted to the EC.

At the end of the Technical PR and Quality PR, PR Feedback forms will be produced by the Peer Reviewers (see section [8.3.2.2.2. PR Feedback form](#)).

The above process is illustrated in Figure 5.

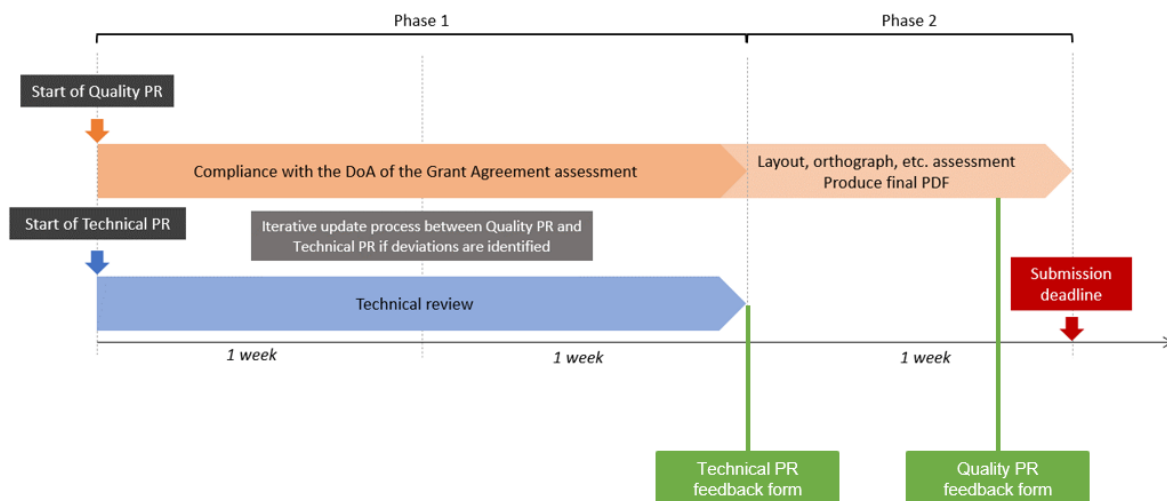


Figure 5: Peer Review process

The PGA or the EEAB can also be involved in the Peer Review process according to specific needs of specific Deliverables.

#### 8.3.2.2.2. PR Feedback form

The Peer Reviewer feedback form enables to validate, through a formalized process, the Technical and Quality Peer Reviews performance. The feedback form comes in addition to the reviews performed using the “Track changes” tool in Microsoft Word, directly into the Deliverable document.

Two Peer Reviewer feedback forms are produced per Deliverable:

- Technical Peer Reviewer feedback form
- Quality Peer Reviewer feedback form

If a Deliverable is reviewed by several Technical PR, all the comments shall be gathered into one single Technical Peer Reviewer feedback form. The same rule applies if there are several Quality PR.

## 8.4. Risk management

### 8.4.1. General methodology

The risk management methodology proposed by the Project Management Institute (PMBOK<sup>[5]</sup>, 2017) is adopted in AWARD. It envisages six steps or processes to ensure the proper management of adverse situations, thus preventing them from negatively impacting the evolution of the project. The detailed risk management procedure is detailed in [Annex 6](#).

### 8.4.2. COVID-19 contingency plan

To provide a complete mitigation for Risk No. 16 of the Grant Agreement “Unforeseen events that inhibit or prohibit project execution (eg. Covid-19 pandemic)”, a specific Covid-19 contingency plan has been established.

The AWARD Covid-19 contingency plan was built based on the methodology proposed by IE Insights<sup>[6]</sup>. A collaborative team with complementary expertise profiles (project management, funded projects management, autonomous vehicles development and deployment, ethics and quality) provided inputs on contingencies due to Covid-19 with corresponding effects on the project and possible mitigations.

The following steps were followed, enabling to build a contingency plan adapted to AWARD project specificities:

1. Identification of the risks and scenarios linked to Covid-19
2. Identification of the effects of such risks and scenarios on the project
3. Identification of mitigations to avoid such scenario
4. Identification of actions to take if the scenario happens anyway

Four types of contingencies due to Covid-19 were extracted from the analysis: (1) Consortium contingencies, (2) Project objectives contingencies, (3) Autonomous vehicles development contingencies, (4) Autonomous vehicles deployment contingencies.

The AWARD Covid-19 contingency plan is available to the Consortium and stored on the AWARD PS platform.

---

<sup>[5]</sup> Project Management Institute's (PMI®) (2017). A Guide to the Project Management Body of Knowledge (PMBOK® Guide) 6th Edition, Newton Square, Pennsylvania USA: Project Management Institute.

<sup>[6]</sup> Borjas Santos, From Long-Term Planning to Contingency Planning, <https://www.ie.edu/insights/articles/from-long-term-planning-to-contingency-planning/>, 24 April 2020.

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## 9. Conclusion

The deliverable “D10.1 – Project Handbook” aims at being a practical guide for the Consortium members and external readers, describing the operational management procedures and tools that have been put in place to efficiently manage AWARD project.

The present content is a public version of the confidential deliverable “D10.6 – Project Management Plan”. It also contains additional information such as the project templates and the AWARD Covid-19 contingency plan.

Updates of the Project Handbook will be integrated into the 2 major updates of the Project Management Plan (confidential):

- at mid-project in Month 17 (D10.7 – Updated Project Management Plan, confidential)
- and at the end of the project in Month 35 (D10.8 – Final Project Management Plan, confidential)

---

## 10. References

- [1] Grant Agreement NUMBER 101006817 – AWARD, 2021.
- [2] Consortium Agreement based upon REGULATION (EU) No 1290/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 11 December 2013 laying down the rules for the participation and dissemination in “Horizon 2020 – the Framework Programme for Research and Innovation (2014-2020)”, and the European Commission Multi-beneficiary, 2021
- [3] Annex 1 – Description of Action (Part A) and (Part B) of the Grant Agreement
- [4] Absiskey, Project netboard, software tool for funded projects, <https://www.absiskey.com/en/project-netboard-tools-software>
- [5] Project Management Institute's (PMI®. A Guide to the Project Management Body of Knowledge (PMBOK® Guide) 6th Edition, *Newton Square, Pennsylvania USA: Project Management Institute*, 2017.
- [6] Borjas Santos, From Long-Term Planning to Contingency Planning, <https://www.ie.edu/insights/articles/from-long-term-planning-to-contingency-planning/>, 24 April 2020.

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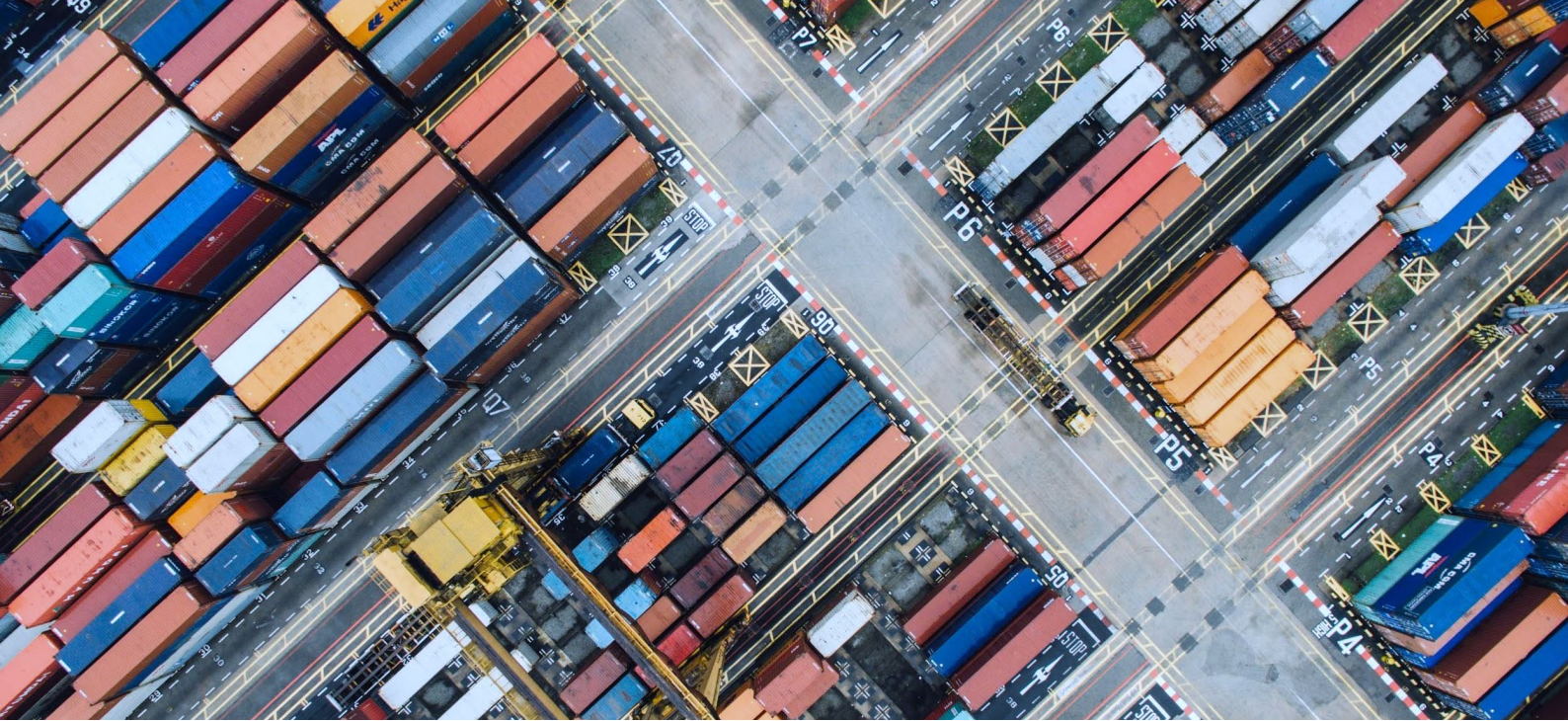
## 11. Annex

### 11.1. Annex 1: Change Request template





## 11.2. Annex 2: Deliverable template



**AWARD**  
Scaling autonomous logistics

---

D# (eg. D2.1)  
Deliverable Name

—  
Lead:

Due date:

Actual delivery date:

Dissemination level: PU /CO

---



The project has received funding from the European Union's Horizon 2020 research and innovation program under Grant Agreement No 101006817.

## Document information

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Project	
Project Acronym	AWARD
Project Full Title	All Weather Autonomous Real logistics operations and Demonstrations
Grant Agreement No.	101006817 - H2020-DT-ART-2020
Project Coordinator	EasyMile
Website	<a href="http://www.award-h2020.eu">www.award-h2020.eu</a>
Starting Date	January 1st, 2021
Duration	36 months

Deliverable	
Deliverable No. – Title	
Dissemination Level	Public / Confidential
Deliverable Type	Report
Work Package No. – Title	
Deliverable Leader	Company Name
Responsible Author(s)	Name Last Name (Company Name)
Responsible Co-Author(s)	Name Last Name (Company Name)
Technical Peer Review	Name Last Name (Company Name)
Quality Peer Review	Name Last Name (Company Name)
Submission date	

## LEGAL DISCLAIMER

This document reflects only the author's view and the Agency is not responsible for any use that may be made of the information it contains.

## ACKNOWLEDGMENT OF EU FUNDING

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[www.award-h2020.eu](http://www.award-h2020.eu)



## Revision history

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Revision Number	Date	Author	Company	Changes
Rev number	DD/MM/YYYY			Initial version

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2. Title 1 .....	8
2.1. Title 2 .....	8
2.1.1. Title 3 .....	8
3. Conclusion .....	10
4. References .....	11

## List of figures

Figure 1: Figure example ..... 9

## List of tables

Table 1: Table example ..... **Erreur ! Signet non défini.**

## List if acronyms

HDV	Heavy-Duty Vehicles
ADS	Autonomous Driving System
ETC.	

## Glossary

Wording 1	Definition 1
Wording 2	Definition 2
Etc.	

---

# 1. Executive Summary

Text



---

## 2. Title 1

### 2.1. Title 2

#### 2.1.1. Title 3

##### 2.1.1.1. Title 4

Text

1. List 1
  2. List 2
- List 1
    - List 2

Reference<sup>[1]</sup>

	Column 1	Column 2
Line 1	Content	
Line 2		

*Table 1: Table example*

---

<sup>[1]</sup> Reference example

## 2.2.4- From multiple horizons

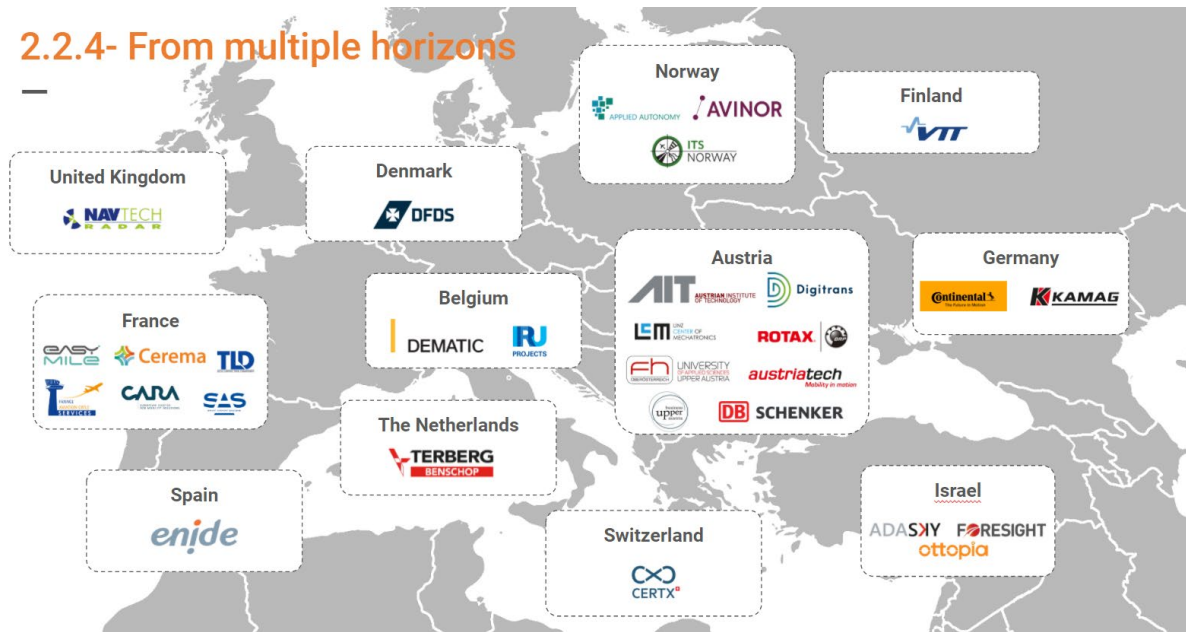


Figure 1: Figure example

---

## 3. Conclusion

Text

---

## 4. References

[1] Authors Name, Reference Title, *Location of the Publication*, Date

[2] Authors Name, Reference Title, *Location of the Publication*, Date

---

## 5. Annex

### 5.1. Annex 1

### 11.3. Annex 3: Minutes of meeting template

## Meeting Name

Author

Date

## Attendees

Attendees	Company

## Objectives

Describe here the objectives of the meeting.

## Summary

Summarizes the meeting in five lines maximum.

## To-Do

Action Type	Assignee	Description	Deadline

## Detailed Minutes

### Subsection Title

Write here some detailed information.

You can use lists:

- This
- is a
- bullet list

## Subsection Title

Write some more details

## Appendices

Indicate here the reference of documents that could be useful.

- Document Title, date
- Document Title, date



## 11.4. Annex 4: Peer Review feedback form template

# AWARD

## Peer Review feedback form

Project	
Project Acronym	AWARD
Project Full Title	All Weather Autonomous Real logistics operations and Demonstrations
Grant Agreement No.	101006817 - H2020-DT-ART-2020
Project Coordinator	EasyMile
Website	<a href="http://www.award-h2020.eu">www.award-h2020.eu</a>
Starting Date	January 2021
Duration	36 months

Document information		
Work Package No.	WPx - [Name]	
Deliverable No.	Dx – [Name]	
Dissemination Level	Confidential / Public	
Deliverable Type	Report / other	
Author(s)	Name, Company	
Deliverable due date		
Type of Peer Review	<input type="checkbox"/> Technical Peer Review	<input type="checkbox"/> Quality Peer Review
Date of Review	dd/mm/yyyy	dd/mm/yyyy
Peer Reviewer(s)	Name, Company	Name, Company

## Guidelines

The Peer Reviewer feedback form enables to validate, through a formalized process, the Technical and Quality Peer Reviews performance. The feedback form comes in addition to the reviews performed using the “Track changes” tool in Microsoft Word, directly into the Deliverable document.

Two Peer Reviewer feedback forms are produced per Deliverable:

- Technical Peer Reviewer feedback form
- Quality Peer Reviewer feedback form

## Peer Review recommendation

Deliverable status after Peer Review:

- Accepted without reservation     Accepted with minor reservation     Rejected unless modified as per recommended     Rejected

## Reservation

If reservations, please detail here:

*Eg. Few syntax corrections, conclusion improvement, etc.*

## Global quality assessment

### 1. General comments on the Deliverable quality

*Eg. The deliverable is in line with the Description of Action and properly reflects the corresponding task objectives, etc.*

### 2. Deliverable substance assessment

Understanding of the applied methodology:

*Assess the methodology applied to the object of the deliverable (clear scientific demonstration leading to the deliverable results, etc.)*

Understanding of achievements/results:

*Assess the achievement and results presented in the deliverable, whether they are relevant to the task, the work package and matching project expectations.*

Consistency with the Description of Action (DoA) - Annex 1 (Part A) and (Part B) of the Grant Agreement:

*Assess the compliance of the deliverable content with the DoA (deviation identified, etc.)*

Understanding of the Deliverable organization:

*Assess the clarity of the overall deliverable content, executive summary, conclusion, chapter's organization, missing parts, etc.*

### **3. Deliverable style assessment**

Quality of presentation of achievements/results:

*Assess the clarity of the achievement/results presentation, understandability of the information provided, etc.*

Layout, grammar, syntax, graphic charter compliance:

*Asses the deliverable layout, syntax, compliance with AWARD's graphic charter, etc.*

## Author feedback on the Peer Review

Author to provide his feedback on the above comments and improvements made on the document if any:

*Eg. The suggestions of the Reviewer were integrated into the document, etc.*

## 11.5. Annex 5: Detailed risk methodology

### 11.5.1. Risk management plan

According to the Project Management Institute (PMI), a risk is an “uncertain event or condition that, if it occurs, has a positive or a negative effect on a project’s objectives” (PMBOK<sup>[7]</sup>, 2017). In other words, risks are specific events or conditions that might positively or negatively affect one or more project objectives, elements, or tasks. Understanding risks can assist in determining how to apply effort and resources to enhance the chances of project success. Day-to-day project risk management focuses on these risks in order to enhance the prospects of a successful project outcome (PS PRM, 2009<sup>[8]</sup>).

*“Project risk management aims to identify and manage risks, which when unmanaged, have the potential to cause the project to deviate from the plan and fail to achieve the defined project objectives. Consequently, the effectiveness of Project Risk Management is directly related to project success.”* (PMBOK, 2017). More specifically, project risk management includes the processes of conducting risk identification, qualitative and quantitative analysis, response planning, response implementation, and monitoring on a project. The objectives of project risk management are to increase the probability and/or impact of positive risks and to decrease the probability and/or impact of negative risks, in order to optimize the chances of project success.’ (PMBOK, 2017). As for AWARD, risk management will focus only on risks that might negatively affect the project.

The aim of this risk management plan describing how risk management activities will be structured and performed is to ensure that adverse situations are properly managed along the evolution of the project.

### 11.5.2. Approach to risk management

Horizon 2020 projects have a specific framework of rules and constraints that should be taken into consideration while tailoring risk management for AWARD. The approach to risk management can be reassessed at any time during the project according to the project needs and circumstances.

AWARD is a collaborative, multimillion, multiannual, European research and innovation project. The combination of these project characteristics produces a challenging and potentially high-variability environment where a robust risk management plan can add value to the overall management of the project by reducing the exposure of the projects to risks and therefore increase the chances of achieving AWARD’s objectives. The large volume and high quality of the (sometimes undefined yet) work expected in the project, the large number of partners, in combination with budget restrictions and a defined timeline are additional features that should be taken into account.

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<sup>[7]</sup> Project Management Institute's (PMI®) (2017). A Guide to the Project Management Body of Knowledge (PMBOK® Guide) 6th Edition, Newton Square, Pennsylvania USA: Project Management Institute.

<sup>[8]</sup> The Standard for risk management in Portfolios, Programs, and Projects (PS PRM, 2009). Newtown Square: Project Management Institute.

Therefore, AWARD risk management will refer to the following project objective:

**Deliver the project scope to the relevant quality as specified in AWARD's GA 101006817, by using up to EUR 19 892 905.63 of EC contribution.**

### 11.5.3. AWARD risk library

Risks in this project may arise in different areas, such as in the technology maturity, the availability of data and information, risks related to integration, stakeholder and end user engagement buy-in and commitment. The AWARD risk management plan classifies risks per group:

- Adoption (AD): requirements, performance, KPIs, etc.
- Project Management (PM): lack of coordination, execution of use cases, partners engagement, etc.
- Technology (TC): solution maturity, data and information security, testing and reliability issues, etc.

The critical risks have been identified at the outset of the project, their Probability (P) and Impact (I) on successful implementation of the project and the risk management measures taken by the Consortium.

In addition to the Grant Agreement, more categories have been identified and added to the main groups in order to support the qualitative risk analysis, as listed in the table hereafter:

Risk group	Risk category
AD - adoption	AD - Dissemination risk
	AD - Legal risk
	AD - Process risk
	AD - Institutional risks
	AD - Supplier risk
PM – Project Management	PM - Administrative risk
	PM - Schedule risks
	PM - Managerial risk
	PM - Quality risk
TC - Technology	TC - Information security risk
	TC - Technical risks

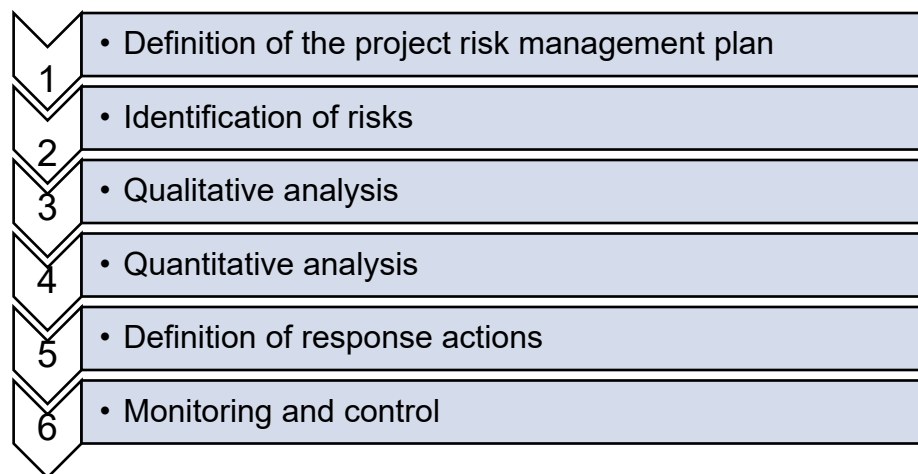
*Table 19: Risk group and categories*

Although some main risks have been identified during the proposal stage and confirmed in the GA, the risk identification is a continuous process. For example, by the time AWARD started in Jan 2021, most European countries were affected by some security measures due to the

COVID-19 global pandemic. This might result in new risks and in a higher probability and impact of the already identified ones. The risk register on the online repository SharePoint will constantly update the impact of COVID-19 on the project activities.

#### 11.5.4. Methodology

The risk management methodology proposed by the PMI (PMBOK<sup>[9]</sup>, 2017) and adopted in AWARD envisages six steps or processes to ensure the proper management of adverse situations, thus preventing them from negatively impacting the evolution of the project. The figure hereafter summarizes the risk management methodology in AWARD and will serve as a visual guide for the following sections.



*Figure 6: Risk management methodology*

##### 11.5.4.1. Definition of the project risk management plan

This risk management plan represents the first step “Definition of the project risk management plan”, since it sets out the appropriate rules and roles to follow in order to guarantee an effective and efficient implementation of risk management within AWARD.

##### 11.5.4.2. Risk identification

This step concerns the iterative identification of negative risks throughout the project. Although some critical risks have already been identified in the proposal and GA stages, the continuous identification of new emerging risks is necessary to minimise the exposure to risks.

Several ways to identify project risks are outlined in but not limited to the list below:

- Initiative of AWARD partners, that can flag at any time via email to the Quality Assurance and Risk Manager (QRM) if they have identified any particular risk. The QRM will get back to the partner and make sure that all required information is properly provided, before Qualitative Analysis) is undertaken for the identified risk.
- Periodic AWARD meetings
- Meetings of the PGA and the PM, whose agenda will include a report on quality and risk issues by the Risk Management

<sup>[9]</sup> Project Management Institute's (PMI®) (2017). A Guide to the Project Management Body of Knowledge (PMBOK® Guide) 6th Edition, Newton Square, Pennsylvania USA: Project Management Institute.



- Comparison with similar previous projects, including industry specific projects in the same field as AWARD
- Analysis of WPs or deliverable related risks
- Analysis of the work breakdown structure and the Gantt chart (e.g. identify issues on the critical path, identify periods where many tasks run in parallel, etc.)

Once it has been identified, a risk should be described with the information required by the AWARD risk register (i.e. category, ownership, impact, response, etc.). An example is provided in the figure hereafter, whereas the risk register will be available on AWARD PS.

Risk Number	WP	Risk Description	Risk category	Risk Owner	Potential impact on project	Inherent Risk			Risk responses	Residual risk score			Comments
						P	I	Total (PxI)		P	I	Total (PxI)	
1								0				0	
2								0				0	
3								0				0	
4								0				0	
5								0				0	
6								0				0	

Figure 7: Description of project risks in the risk register

#### 11.5.4.3. Qualitative risk analysis

Once a risk has been identified, it shall be evaluated based on its probability and impact through a qualitative analysis. “Qualitative risk analysis evaluates the importance of each risk in order to categorise and prioritise individual risks for further attention” (PS PRM, 2009<sup>[10]</sup>).

The partner who identified a risk, in collaboration with the QRM, will categorise it and give a preliminary score for the probability and the impact of that particular risk according to the available information. This will allow a prioritisation or ranking of risks, rating the probabilities of occurrence (low, medium and high), and impact/ significance (low, medium and high). The following definitions of risk probability and impacts can be set:

SCALE	PROBABILITY	IMPACT ON PROJECT OBJECTIVES		
		TIME	COST	QUALITY/SCOPE
Very High	> 70%	> 6 months	<30%	Very significant impact on overall quality/scope
High	51-70%	3-6 months	< 20%	Significant impact on overall quality/scope
Medium	31-50%	1-3 months	<10%	Some impact in key areas of scope
Low	1-30%	1-4 weeks	< 5%	Minor impact on overall functionality

The figures below are to be used to generate the risk score to rank risks during the Qualitative Analysis. The risk score of a risk is equal to the multiplication of the probability score times the impact score of a risk.

<sup>[10]</sup> The Standard for risk management in Portfolios, Programs, and Projects (PS PRM, 2009). Newtown Square: Project Management Institute.

Probability and Impact Scales			
Probability		Impact	
Low	1	Low	1
Medium	2	Medium	2
High	3	High	4
Very high	4	Very high	8

		Probability			
		1	2	3	4
Impact	1	1	2	3	4
	2	2	4	6	8
	4	4	8	12	16
	8	8	16	24	32

Figure 8: Probability and impact matrix

The figures are defined in a way that more importance is given to the impact that a risk might have rather than the probability that it materializes.

The risk register is then updated and saved in the project’s shared folders on AWARD PS, visible to all partners. The Risk Register is also sent out every month prior to the WP Leaders Monthly Review and to the quarterly WP Leaders Committee virtual meetings for review and comments. The risk register and the prioritised list of risks is explicitly or implicitly (if there are no comments/objections) approved after the end of each Consortium telco or meeting.

#### 11.5.4.4. Quantitative risk analysis

The quantitative analysis is performed for the risks identified as high risk. Whenever a high risk is identified, the PGA will carry out an assessment to understand how much budget is at stake and how many weeks/months the project might be delayed in case a risk materializes.

#### 11.5.4.5. Plan Risk Responses

Following the risk identification and prioritization, the next step is to plan a risk response, if necessary, in order to address the risk and its unwanted effects on the project objectives. ‘Risk responses should be appropriate for the significance of the risk, cost-effective in meeting the challenge, realistic within the project context, agreed upon by all parties involved, and owned by a responsible person’ (PMBOK, 2017).

It is good practice to design risk responses that can address more than one risk at the same time if possible, for example a risk response could address the common cause of a group of risks. Also, many small risks that would not require a risk response on an individual level, might be an important threat if aggregated together, therefore a generic risk response to this group of risks can be important to reduce the risk exposure of the project.

Based on the input received from respective task leaders, the PGA takes decisions regarding contingency plans of mitigating actions in collaboration with the WP Leaders Committee. However, since risk responses are developed during the duration of the project, they are not included in the original plan and therefore out of Scope by definition. Hence, if a Risk Response entails a significant change to the project Scope, an unofficial approval from the Project Officer (or even an amendment to the GA depending on the importance of the change) might be required. This must be examined on a per case basis by the PGA.

It must be noted that risk responses might not fully reduce the probability of the risk happening or its impact on the project, therefore this residual risk should be identified in the risk registry and assessed accordingly. In addition, it might be the case that the implementation of a risk response (or contingency plan) generates other risks, therefore these secondary risks should

be identified in the risk registry and assessed/prioritised accordingly. Ideally, residual and secondary risks would rank relatively low in the risk prioritisation and would eventually therefore be accepted or avoided by the Consortium.

#### 11.5.4.6. Monitor Risks

During this final step, the response plan is executed, and the residual and secondary risks are tracked to manage the outcomes of risk mitigating actions. The primary objectives of the Monitor Risks process are to track identified risks and maintain viability of response plans. The risk management processes are also reviewed for their effectiveness, as well as the risk register.

Additionally, constant vigilance is guaranteed to quickly identify new risks. The monitoring activities are in fact a continuous process over the project lifetime and are not limited to the final step of the risk management methodology.

#### 11.5.5. Roles and responsibilities

According to the GA, the internal and external risks management concerns the implementation of the project under the responsibility of the Project Coordinator (PCO) in collaboration with the WP leaders. The management of risks will be part of the regular meetings of the PGA and the WP Leaders Committee.

The main responsible for Risk Management (RM) within AWARD is the PCO as the leader of T10.2 and the Quality Assurance and Risk Manager (QRM). The QRM:

- Coordinates RM processes;
- Keeps the risk register and the risk management plan up to date;
- Advises partners on RM aspects;
- performs project quality evaluation criteria, internal and external risk assessment, and continuous monitoring;
- Based on the input received from respective task leaders, the QRM takes decisions regarding contingency plans in collaboration with the PGA, that reviews and provides input to contingency plans.

However, the implementation of the quality standards and risk management plan is a shared effort among all AWARD partners. In particular:

- **Risk Owners:** The Risk Owner is the individual responsible for monitoring the risk and for proposing an appropriate risk strategy. It is the responsibility of the risk owner, with the contribution of QRM where appropriate, to manage the corresponding risk through the subsequent risk management process.
- **WP Leaders:** WP Leaders will have a general overview and knowledge of the risks jeopardising the implementation of their WPs. As such, they will contribute to the identification and assessment of these risks, as well as working with the Risk Owners of these risks (it often makes sense that WP Leaders are also Risk Owners of the risks in their WPs). Additionally, they will review and/or comment on the risk register before every WP Leader Committee virtual meeting.
- **WP Leaders Committee:** The WP Leaders Committee is responsible for reviewing and/or commenting the risk register before every virtual meeting. They also approve

the contingency plans elaborated by the risk owners in collaboration with the QRM. If a Risk Response entailing a significant change to the project Scope requires an unofficial approval from the Project Officer (or even an amendment to the GA depending on the importance of the change), the PCO will communicate with the Project Officer.

- **Project General Assembly:** The PGA is responsible for the approval of any important or high impact risk strategy where the Consortium would need to vote and come to a decision. Every case will be assessed on a per case basis. If a Risk Response entailing a significant change to the project Scope requires an unofficial approval from the Project Officer (or even an amendment to the GA depending on the importance of the change), the PCO - chairing the PGA - will communicate with the Project Officer.
- **All partners:** All partners are expected to contribute toward identifying and reporting any risks in the project as well as to participate in risk management activities relevant to their involvement in the project.

Risk activity	Responsibility
Risk identification	All partners
Risk assessment	All partners
Risk Register	QRM
Risk and triggers monitoring	Risk Owner
Risk response identification	Risk Owner and QRM
Risk response approval	PGA
Risk response implementation monitoring	Risk Owner and QRM

*Table 20: Responsibilities in risk management*

### 11.5.6. Funding

RM is an integral part of Project Management, so risk management activities are the responsibility of the Coordinator and are already included in the relevant estimated effort and budget. In addition, all partners are expected to participate in risk management. Part of the partners' effort allocated to the PM WP is for their participation in risk management activities. However, due to the Horizon 2020 rules, it is not possible to request funding from the European Commission for the implementation of Risk related activities (i.e. funding for the implementation of risk response plans and contingency funds). Due to this restriction, selected risk response plans are to be designed having this parameter in mind.

For this reason, the Consortium would have to resort to other means in order to fund the implementation of risk related activities where necessary, for example the additional costs can be covered through:

- The existing EC contribution of one or more partners (internal transfers where appropriate according to project priorities and severity of the risk to be mitigated);
- The own funds of one or more partners;
- Other funds external to the project.

The final decision on how to cover the costs (if any) of a risk response plan or a contingency plan is to be taken by the PGA (cf. AWARD CA), always according to the individual circumstances and the level of threat that a risk poses to the project.

#### 11.5.7. Stakeholders' risk tolerance

Considering that AWARD is an innovation action and that its solutions have already achieved a high Technology Readiness Level (TRL), limited significant changes are expected to the project baseline during the project implementation. More specifically the project's risk tolerance is mainly defined by the following:

- The EC contribution allocated by the EC to the AWARD project is €19 892 905.63. The Consortium under no circumstances can receive more EC contribution than one set at the project start (cf. Article 3 of the GA), therefore the project risk tolerance to Costs (i.e. project budget) related risks is expected to be very low.
- The deadline agreed with the funder to deliver the AWARD project is the 31<sup>st</sup> Dec 2023. The Consortium can ask for a Schedule extension towards the end of the project. Extension requests are assessed by the EC on a per case basis. A short schedule extension is possible following approval by the EC and the submission of a relevant amendment to the GA. However, due to the uncertainty in the approvals of extensions as well as the limited extension period, the project risk tolerance to Time related (i.e. project schedule) risks is expected to be low.
- The agreed project Scope is included in the DoA. As the project is an innovation action and many technologies already achieved a high TRL, the stakeholders' risk tolerance related to Scope is relatively low. Changes to the project Scope should be examined on a per case basis and most of them would require an amendment to the GA. However, changes to the project Scope should in principle be limited (see Article 55 of the GA).

Other elements affecting the Stakeholders' risk tolerance is the individual tolerance of each organization depending on their objectives, types, culture, but also on local and national measures limiting the contagion rates during the COVID-19 global pandemic etc.

The QRM and the PGA will monitor closely any potential deviation from the project baseline (costs, time, and scope) to prevent them and to avoid costly changes thanks to a proactive approach. Also, the risk tolerance should be revised by the PGA at any time during the project, according to future project circumstances.